

IN THE CLAIMS

Please amend the claims as follows:

1.-6. (Canceled)

7. (Currently Amended) A processing method for processing an object to be processed by using a processing apparatus including a processing chamber; a shower head structure, installed at a ceiling portion of the processing chamber, having a plurality of gas jetting holes formed on a gas jetting surface thereof to inject a processing gas into the processing chamber, the gas jetting surface facing toward an inside of the processing chamber; and a mounting table installed in the processing chamber to face toward the shower head structure, the method comprising the steps of:

~~restricting a head distance between the gas jetting surface and the mounting table and a gas jetting velocity from the gas jetting holes to be within an area in a plane coordinates system having the head distance as a horizontal axis and the gas jetting velocity as a vertical axis, the area being surrounded by a quadrilateral shape formed by straight lines connecting four points including a point where the gas jetting velocity is 32 m/sec and the head distance is 15 mm; a point where the gas jetting velocity is 67 m/sec and the head distance is 15 mm; a point where the gas jetting velocity is 40 m/sec and the head distance is 77 mm; and a point where the gas jetting velocity is 113 m/sec and the head distance is 77 mm;~~

loading the object to be processed on the mounting table; and

introducing the processing gas through the gas jetting holes into the processing chamber, [[.]]

wherein while processing the object, a head distance between the gas jetting surface

and the mounting table and a gas jetting velocity from the gas jetting holes are restricted to be within an area in a plane coordinates system having the head distance as a horizontal axis and the gas jetting velocity as a vertical axis, the area being surrounded by a quadrilateral shape formed by straight lines connecting four points including a point where the gas jetting velocity is 32 m/sec and the head distance is 15 mm; a point where the gas jetting velocity is 67 m/sec and the head distance is 15 mm; a point where the gas jetting velocity is 40 m/sec and the head distance is 77 mm; and a point where the gas jetting velocity is 113 m/sec and the head distance is 77 mm.

8. (Original) The method of claim 7, wherein the processing gas contains ozone for reforming a metal oxide film formed on a surface of the object to be processed.

9. (Original) The method of claim 8, wherein the metal oxide film is a tantalum oxide film.

10. (New) The method of claim 7, wherein while processing the object, a pressure inside the processing chamber is maintained at a constant level.

11. (New) The method of claim 7, wherein while processing the object, a temperature of the object to be processed is maintained at a constant level.

12. (New) A processing method for processing an object, said method comprising:  
loading the object onto a mounting table provided within a processing chamber having a plurality of gas jetting holes formed on a gas jetting surface facing towards the mounting table; and

injecting a processing gas into the processing chamber through the plurality of gas jetting holes while restricting a distance between the gas jetting surface and the mounting

table and a velocity of the processing gas from the plurality of gas jetting holes to be within an area in a plane coordinates system having the distance as a first axis thereof and the velocity as a second axis that is perpendicular to the first axis,

wherein the area has a quadrilateral shape formed by a first line connecting a first point where the velocity is 32 m/sec and the distance is 15 mm and a second point where the velocity is 67 m/sec and the distance is 15 mm, a second line connecting the first point to a third point where the velocity is 40 m/sec and the distance is 77 mm, a third line connecting the second point to a fourth point where the velocity is 113 m/sec and the distance is 77 mm, and a fourth line connecting the third point to the fourth point.

13. (New) The method of claim 12, wherein the processing gas being injected into the processing chamber contains ozone for reforming a metal oxide film formed on a surface of the object.

14. (New) The method of claim 13, wherein the metal oxide film is a tantalum oxide film.

15. (New) The method of claim 12, further comprising maintaining a pressure within the processing chamber at a constant level while the processing gas is being injected into the processing chamber.

16. (New) The method of claim 12, further comprising maintaining a temperature within the processing chamber at a constant level while the processing gas is being injected into the processing chamber.

17. (New) The method of claim 12, wherein the processing chamber in which the object is loaded is configured such that the plurality of gas jetting holes are all provided

within a circular area on the gas jetting surface, and such that the mounting table has a circular shape.

18. (New) The method of claim 17, wherein the circular area has a diameter that is equal to or smaller than a diameter of the object.

19. (New) The method of claim 17, wherein the circular area has a diameter that is 70% to 100% of a diameter of the object.